

SHENYABSKAYA, Ye.A.; KUZYAKOV, Yu.Ya.; TATEVSKIY, V.M.

New analysis of the oscillatory structure of the spectrum of titanium monochloride in the region of 4200 Å. Opt. i spektr. 12 no.3: 359-363 Mr '62. (MIRA 15:3)

(Titanium chloride--Spectra)

S/051/63/014/002/023/026  
E039/E120

AUTHORS: Gurvich, L.V., and Shenyavskaya, Ye.A.

TITLE: The electron spectrum of scandium monofluoride

PERIODICAL: Optika i spektroskopiya, v.14, no.2, 1963, 307-308

TEXT: This investigation was carried out in order to provide information on the spectra of diatomic compounds of elements of subgroup IIIb with halogens. A discharge tube containing  $\text{ScF}_3$  and metallic Sc, with He and A as a discharge carrier, was used as a light source. Spectra were obtained using an УСП-28 (ISP-28) spectrograph and the optimum conditions were: cathode (Armco iron) 6 mm diameter, 30 mm long, 410 V, 350 mA, He at a pressure of 6 mm Hg. In the region of 2850 Å a group of bands was obtained which had not previously been observed. Their intensity was too low for analysis and they were overlapped by iron lines. More satisfactory results were obtained using a quartz tube with a 10 mm diameter capillary 150 mm long and heated externally by a nichrome helix. The tube contained a mixture of Sc and  $\text{ScF}_3$  and was sleeved with platinum in order to prevent the fluoride reacting with the quartz. Optimum conditions were: He and A at 2 mm

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The electron spectrum of scandium...

S/051/63/014/002/023/026  
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pressure; 1.2 - 1.3 amp at 2.4 - 3 kV. The ScF spectrum in the range 2550-3000 Å was observed in the second order using a ДФС-8 (DFS-8). Four groups of bands were observed in the violet and one band system in the red. Greatest intensity was at about 2880 Å. An analysis of the vibrational structure of the spectra was carried out. Calculated values of the molecular constants for ScF are:

$$\omega_e'' = 734.3; \quad \omega_e'' x_e'' = 3.5; \quad \epsilon = 35013.4; \quad \omega_e' = 582.6;$$

$\omega_e' x_e' = 6.1 \text{ cm}^{-1}$ . It is shown that the energy of dissociation of ScF is  $\sim 4.5$  to 6 eV.

There is 1 table.

SUBMITTED: July 30, 1962

Card 2/2

ANISIMOV, I.I.; SHENYANSKIY, K.A.; RUDIK, G.T.

Specific prophylaxis of brucellosis in cattle on collective  
and state farms in Stalino Province. Veterinariia 32 no.5:  
25-29 My '55. (MIRA 8:7)

1. Nachal'nik vetetdela Stalinskoy oblasti (for Anisimov).
  2. Direktor mezhsevkhozhney laboratorii (for Shenyanskiy).
  3. Starshiy vetvrach sevkhoza imeni Otktyabr'skoy revolyutsii  
(for Rudik).
- (STALINO PROVINCE--BRUCELLOSIS IN CATTLE--PREVENTIVE INOCULA-  
TION)

SHENYAVSKAYA, Ye.A.; GURVICH, L.W.; MAL'TSEV, A.A.

Electronic spectrum of the molecule IaF. Vest. Mosk. un. Ser.  
2:Khim. 20 no.4:10-13 JI-Ag '65. (MIRA 18:10)

1. Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo  
universiteta.

31431

S/188/61/000/006/003/007  
B108/B138

9.6000(1040,1139)

AUTHORS: Bukhovtsev, B. B., Ordanovich, A. Ye., Shenyavskiy, L. A.,  
Shmal'gauzen, V. I.

TITLE: Measurement of the probability distribution of the instantaneous values of signals by means of amplitude discriminators

PERIODICAL: Moscow Universitet. Vestnik. Seriya III. Fizika, astronomiya, no. 6, 1961, 25 - 31

TEXT: The principle of operation and the designs of two-channel and multi-channel amplitude discriminators are presented. Determination of the probability distribution by an amplitude discriminator is based on measuring the time during which the signal in question does not exceed a given level. The discriminator trims the signal to the desired level and delivers a certain impulse for every section of the signal that lies under the set level. Subsequently, the impulses are time-averaged by a separate device. Fig. 3 shows a 16-channel amplitude discriminator with a threshold given by  $U_{n+1/2} = \Delta U(n + 1/2)$  where

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28(1)

SOV/118-59-9-5/20

AUTHOR: Shenyayev Ya.L., Engineer

TITLE: Mechanization of Assembling Operations at the Plant  
imeni Ordzhonikidze

PERIODICAL: Mekhanizatsiya i avtomatizatsiya proizvodstva, 1959,  
Nr 9, pp 19-20 (USSR)

ABSTRACT: Manufacturing oil field equipment is a hard task, which  
owing to lack of mechanization, requires the expenditure  
of much labor. Furthermore, the majority of installations  
used in this industrial branch are of a large size, weighing  
sometimes tens of tons. The process of assembling cylindrical  
tanks from 4.68 to 9.10 hours depending on their diameter;  
hence the importance of its mechanization. However, it was  
not so easy to construct a universal type of installation,  
permitting the assembly of all sorts of tanks, diameters of  
which vary from 80 cm to 4 meters and more. Nevertheless,  
after long research, the chief designer of the All-Union  
Planning-Technological Institute (VPTI), Lekanov, in co-operation  
with technologists and designers of the Plant imeni

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SOV/118-59-9-5/20

Mechanization of Assembling Operations at the Plant imeni  
Ordzhonikidze

Ordzhonikidze, developed and introduced, in 1958, an installation which satisfied all technical requirements. The installation is shown in Fig. 1; its dimensions are: length - 3.3 m, height - 1 m, and width - 97.5 cm. It consists, on the whole, of a body (1) and a chassis (2) to which the body is attached; the assembly is provided with two pairs of wheels, and travels along a rail-track. The principal component of the installation is the working head (7) (shown separately in Fig. 2) mounted on shafts (11 and 12); each of the shafts (12) has a cylindrical pinion (14) and a pressure-roller (15) fastened to it. To perform the operation of assembling, the tank halves are put by a crane on the installation in such a way that their edges are placed between the pressure-rollers. Rotating planks (13 and 14) operate the rollers until the tank-halves are pressed and securely joined. Application of this installation speeds up the process of assembling 4 to 5 times compared to what it was when manual labor was used.

2/2 Card

There are 2 diagrams.

SHENZHE, P., kand.vet.nauk; SHELASHSKIY, V.A., vetvrach

Veterinary medicine in the Mongolian People's Republic. Veteri-  
nariia 35 no.8:83-84 Ag '58. (MIRA 11:9)

1. Nachal'nik Veterinarnogo upravleniya Ministerstva sel'skogo  
khozyaystva Mongol'skoy Narodnoy Respubliki (for Shenzhe).  
(Mongolia--Veterinary medicine)

SHAPALEVICH B.P.

Continuous extractor. I. Ya. Pomarenko, B. P. Shapalevich and G. S. Stepanov. U.S.S.R. 100,643, Aug. 28, 1957. The structural and operational details of a continuous operation extractor for essential oils are given. M. Hosh...

4  
114E20

11

SHEPANEVA, P. P.

Vinyl chloride. S. S. Bobkov and P. P. Shepaneva, U.S. S. R. 66,688, July 31, 1946. Inchloroethane is pyrolytically dehydrochlorinated at 480-520° over activated C acting as catalyst. At this temp the catalyst does not lose its activity over a long period of time. CH<sub>2</sub> CHCl thus produced contains impurities which interfere with its polymerization. These impurities are removed by treating the chloride with concd. H<sub>2</sub>SO<sub>4</sub> or with CL. M. H.

SHEPANOV, V.T.

"The organization of medical care for the population in the Far North."  
Sovetskoye Zdravookhraneniye, Vol. 13, No 1, pp 21-25, 1954.

Translation-M-142, 27 Jan 1955.

1.44002-66 EPT12/1 NIP(4) 30

ACC NR: AR6025771

SOURCE CODE: UR/0058/66/000/004/DO60/DO61

AUTHOR: Rezayev, N. I.; Shepanyak, K.

TITLE: Investigation of intermolecular interaction in solutions with the aid of Raman line contours

SOURCE: Ref. zh. Fizika, Abs. 4D466

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 3, vyp. 1, 1964, 169-179

TOPIC TAGS: molecular interaction, chloroform, organic solvent, Raman spectroscopy, spectral line, line width, hydrogen bonding

ABSTRACT: The authors measured the frequency, integral intensity, and the width of several lines of chloroform and of solvents in the following systems: chloroform - dioxane, chloroform - ethyl ether, chloroform - ethyl alcohol, chloroform - acetone, and chloroform - phosphorus oxychloride. A specific variation of the shape and width of the valence vibration line of the CH-group of the chloroform is established in all the investigated solutions. It is shown that an intermolecular interaction of the hydrogen-bonding type is realized in the investigated solutions between the CH-group of the chloroform and the molecule of the solvent. The energy of the intermolecular bond was measured for the chloroform - phosphorus oxychloride solution ( $2.0 \pm 0.5$  kcal/mole). [Translation of abstract]

SUB CODE: 20

Card 1/1 ns

SHEPCHENKO, N.P.

Infrared heating. Vod. 1 san. takh. no.5:31-32 My '60.  
(MIRA 13:10)

(Infrared rays—Industrial applications)

SHEPCHENKO, N.P. (Novosibirsk)

Calculation of additional heat losses through walls based  
on construction norms and regulations. Vod.i san.tekh.  
no.8:13-14 Ag '60. (MIRA 13:7)  
(Heating--Tables, calculations, etc.)

SHEPCHENKO, N.P., inzh. (Tashkent)

Choosing the capacity of a boiler supplying hot water. Vod. i  
san. tekhn. no.1:28-29 Ja '62. (MIRA 15:6)  
(Boilers) (Hot-water supply)

SHEPCHENKO, N. P., inzh. (Tashkent)

Using steam as a heat carrier in the heating sections of cond.  
ditioners. Vod. i san. tekhn. no. 8:16 Ag '64 (MIRA 18:1)

GENDIN, I. Ye.; SHEPCHENKO, Ya. D.

Glass Manufacture

Modernizing the switching of the tank furnace, Stek. i ker. 10, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

1. SHEPEL', A. B.
2. USSR 600
4. Poultry
7. Leading poultry farm, Ptitsevodstvo, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

LITVINENKO, M.S.; TYUTYUNNIKOV, Yu.B.; SHEPEL', A.V.

Remarks concerning G.P.Govoroi's letter. Koks i khim. no.11:58-60  
'61. (MIRA 15:1)

1. Ukrainskiy uglekhimicheskiy institut.  
(Coke-oven gas)

TYUTYUNNIKOV, Yu.B.; VERSHININA, S.V.; VASHCHENKO, L.A.; SHEPEL', A.V.

Selecting oils for charges in order to increase benzene and  
gas output. Koks i khim. no.16:43-45 '61. (MIRA 15:2)

1. Ukrainskiy uglekhimicheskiy institut.  
(Benzene)  
(Gases)

SHEPEL', G., inzh., elektromekhanik

Lift-winches on ships of the type "Belomorskles." Mor. flot  
23 no. 12.26-28 D '63. (MIRA 17:5)

1. Teplokhod "Belomorskles".

SHEPEL', G.G.

Cupola furnace manometer. Lit. proizv. no. 10:31 N-D '53.  
(MLRA 6:12)  
(Cupola-furnaces) (Manometer)

SECRET 16

/Heat insulation of pouring ladles

SECRET 16

time.

Dist: 4320

21

*[Handwritten signature]*

SHEPEL', G.G.

Overheating cupola furnace cast iron. Lit. proizv. no.9:40-  
41.S '60. (MIRA 13:9)  
(Cupola furnaces) (Cast iron--Metallurgy)

SHEPEL', G.G.

Method of improving liquid cast iron by the ladle addition of steel  
cuttings. Lit.proizv. no.3:45-46 Mr '62. (MIRA 15:3)  
(Cast iron--Metallurgy)

SHEPEL', L., inzh.

Design of a central pressure-control valve. Avt. transp. 37 no.12:42  
D '59. (MIRA 13:3)

(Motortrucks--Pneumatic equipment)

SHEPEL', L.T., inzh.; TEREENT'YEV, S.G., inzh.; ANTONOV, P.I., inzh.

Application of automatic hard facing of rolls on the 750 mill.  
Stal' 22 no.3:256-257 Mr '62. (MIRA 15:3)

1. Zavod "Krasnyy Oktyabr'".  
(Rolls (Iron mills)) (Hard facing)

GUR'YEV, A.V., kand.tekhn.nauk; GEDBERG, M.G.; THERENT'YEV, S.G., inzh.;  
SHEPEL', L.T.

Causes of certain defects in the rolls used for cold rolling.  
Stal' 23 no.5:438-440 My '63. (MIRA 16:5)

1. Zavod "Krasnyy Oktyabr'".  
(Rolls (Iron mills)—Defects)

SHEPEL', M.A.

Mechanized gathering of the panicles of sweet sorgo. Mekh. sil'.  
hosp. 11 no.7:10-11 J1 '60. (MIRA 13:10)

1. Nikolayevskaya oblastnaya sel'skokhozyaystvennaya ispytatel'naya  
stantsiya.

(Sorghum--Harvesting)

SHEPEL', M.M., inzh.-mekhanik

Apparatus for harvesting pulse crops. Mekh. sil'. hosp. 14  
no.6:10-11 Je '63. (MIRA 17:3)

1. SHEPOLD, N.
2. USSR (600)
4. Vacuum Tubes
7. Replacing the 1B1P vacuum tube with the 1K1P tube. Radio, No. 2, 1953.
9. Monthly List of Russian Accessions, Library of Congress, May 1953, Uncl.

ZEL'MAN, A.S.; POLISHKIN, A.A.; SHEPEL', N.M.

For accurate fueling of diesel tractors. Mekh. sil'. hosp.  
12 no.9:19 S '61. (MIRA 14:11)

1. Melitopol'skiy institut mekhanizatsii sel'skogo khozyaystva.  
(Diesel engines--Fuel systems)

L 22914-66 EWT(m)/EWP(t) IJP(c) JD/JG  
ACC NR: AP6009657 SOURCE CODE: UR/0181/66/008/003/0758/0766

AUTHORS: Rzhanov, A. V.; Svitashev, K. K.; Filatova, Ye. S.;  
Shepel', V. M.

ORG: Institute of Semiconductors, SO AN SSSR, Novosibirsk (Institut poluprovodnikov SO AN SSSR)

TITLE: Investigation of the surface photoconductivity of germanium

SOURCE: Fizika tverdogo tela, v. 8, no. 3, 1966, 758-766

TOPIC TAGS: germanium, photoconductivity, surface property, semiconductor conductivity, semiconductor impurity, forbidden band, spectral energy distribution

ABSTRACT: This is a continuation of earlier work (FTT v. 3, 1557, 1961) dealing with impurity photoconductivity and the concentration of photoactive surface defects. The present investigation was made with p-type germanium doped with gallium, and having a specific resistivity 20 -- 30 ohm cm and a carrier lifetime ~800  $\mu$ sec. The samples were placed in a cryostat in vacuum  $5 \times 10^{-7}$  torr and exposed

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L 22914-66

ACC NR: AP6009657

to monochromatic radiation from the IKS-12 instrument. Measurements were made of the temperature and spectral dependences of the surface photoconductivity and also of its time lag. The impurity photoconductivity of a thin sample of germanium was measured with light modulated at 12 cps. No impurity photoconductivity was observed at room temperature and at dry ice temperature, but was observed at liquid nitrogen temperature ( $-170^{\circ}\text{C}$ ), at which all other measurements were made. The results demonstrated once more the existence of a specific photoconductivity in germanium, connected with excitation of surface defects. The experimental reasons for this conclusion are presented in detail. The results also show that it is possible in principle to obtain data on the energy levels of the photoactive surface defects in the forbidden band of the semiconductor by analyzing the surface-photoconductivity spectra. Further data can be expected from these results if the surface potential can be determined by an independent method and the spectral resolution is improved. Work is continued in this direction. Orig. art. has: 12 figures, 3 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: 20Jul65/ ORIG REF: 003/ OTH REF: 005

Card

2/2 87

ACC NR: AR6018576

SOURCE CODE: UR/0181/66/008/006/1955/1957

AUTHOR: Rzhanov, A. V.; Svitashev, K. K.; Shepel', V. M.

ORG: Institute of Physics of Semiconductors, SO AN SSSR, Novosibirsk (Institut fiziki poluprovodnikov SO AN SSSR)

TITLE: Influence of capture of nonequilibrium carriers by surface defects on the spectrum of the intrinsic photoconductivity of a thin sample of germanium

SOURCE: Fizika tverdogo tela, v. 8, no. 6, 1966, 1955-1957

TOPIC TAGS: photoconductivity, germanium semiconductor, capture cross section

ABSTRACT: The authors compare the pulses of intrinsic photoconductivity of thick and thin samples of p-type germanium at liquid-nitrogen temperature. The shape of the photoconductivity pulse of the thin sample exhibited singularities characteristic of the presence of traps. It is shown that the total change of the conductivity of the sample under the influence of the light consists of three factors (photoconductivity proper, change in surface conductivity as a result of change in carrier density, and change in surface conductivity as a result of change of the surface charge), and in the region of  $1.64 \mu$  the contribution of the third process is comparable in magnitude with the contributions of the first two. The additional illumination, which normally eliminates adhesion of nonequilibrium carriers on the germanium surface at low temperatures, reduced the photoconductivity of the thin germanium to approximately the same value as that of thick germanium (5 vs. 0.5 mm) and eliminated the peak at  $1.64 \mu$ .

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ACC NR: AP6018576

This is interpreted as being due to the presence of a group of surface capture centers near the boundary of the valence band. The additional illumination ionizes the surface capture centers and eliminates their influence both on the shape of the photoconductivity pulse and on the spectral dependence of the photoconductivity of the thin sample of germanium. The authors thank T. I. Kovalevskaya for producing the surface finish on the samples. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 04Jan66/ ORIG REF: 003

Card

2/2/11LP

SHEPEL', V. V.

33913. Fiziki-Lauryeaty Stalinskikh Pryemiy 1949 Goda. Fizika V Shkolye, 1949,  
No 5, C. 6-13, C. Portr.

30: Letopis' Zhurnal'nykh Statey, Vol. 46, Moskva, 1949.

SHEFEL', V. V.

RT-1053 (Review of soviet work in the fields of chemistry and chemical technology done by 1951 Stalin Prize laureates) Abridged from: Obzor rabot v oblasti khimii, smezhnykh s nei nauk i khimicheskoi tekhnologii, udostoennykh stalinskikh premii za 1951 g.  
Uspekhi Khimii, 21(4): 369-378, 1952.

SHEPETH, V.V.

47-4-1/20

**AUTHOR:** Shepel', V.V., (Moscow)

**TITLE:** The 1957 Lenin Prizes in Physics and Technics (Leninskiye premii 1957 goda po fizike i tekhnike)

**PERIODICAL:** Fizika v shkole, 1957, No 4, pp 3-8 (USSR)

**ABSTRACT:** In 1956 the Central Committee of the Soviet Union's Communist Party and the Council of Ministers decided to resume the payment of Lenin prizes which were established in 1925 to promote outstanding works in science and technics. On 22 April 1957, the Committee on Lenin prizes published the names of the 1957 winners in physics, mathematics, biology, humanities and new technology. The article gives the names of only those persons who are of interest to teachers of physics. The first one is Yevgeniy Konstantinovich Zavoytskiy, Associate Member of the USSR Academy of Sciences, (AN SSSR) for the discovery, in 1944, and study of paramagnetic resonance. It ultimately led to a new scientific trend now called "Magnetic Radiospectroscopy" or "Magnetic Resonance". The article then describes the phenomenon, and states that on the basis of Zavoytskiy's works the American scientists Parcell and Bloch (Blok) discovered the nuclear magnetic resonance for which they were awarded the Nobel prize in 1953. During the last years more than 600

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The 1957 Lenin Prizes in Physics and Technics

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comparatively large angular size, for instance nebulae and interplanetary substances; 2) meniscus telescopes of the Maksutov system noted for their simplicity and reliability: with an aperture of 500 mm they register stars of almost the 19th magnitude; 3) a quartz non-slit spectrograph to be used for photographing the spectra of the solar corona and the chromosphere during a complete solar eclipse as well as the spectra of stars and comets at night; 4) a star photo-electrical polarimeter representing a combination of an analyzer of light and a star electrophotometer. - A group of scientific workers and engineers consisting of B. Ye. Paton, G.S. Voloshkevich, I.G. Guzenko, I.D. Davydenko and V.G. Radchenko was honored with the Lenin prize for the electric slag welding which they created and introduced in heavy equipment plants. Electric slag welding facilitates the manufacture of large parts without regard to size and weight. A description of the method follows. The Academician Andrey Nikolayevich Tupolev was awarded the Lenin prize for the building of the jet passenger plane TU-104 whose cruising speed is 800 km per hour and ceiling is over 10 km. It is furnished with two turbo-jet engines each consisting of a gas turbine and a compressor. The rated capacity of the gas turbines exceeds

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SHEPEL', V.V. (Moscow)

Lenin prizes of 1958. Fiz. v shkole 18 no.4:8-14 J1-Ag '58.  
(MIRA 11:7)

(Physics) (Lenin Prizes)

GEVORKYAN, Ruben Georgiyevich; ~~SHKPEL'~~, Vladimir Vladimirovich;  
BOGUSLAVSKAYA, N.A., red.; LIPKINA, T.G., red.izd-va; TITOVA,  
L.L., tekhn.red.

[General physics] Kurs obshchei fiziki. Moskva, Gos.izd-vo  
"Sovetskaya nauka," 1959. 517 p. (MIRA 13:3)  
(Physics--Handbooks, manuals, etc.)

PUTILOV, Konstantin Anatol'yevich, prof.: Prinimal uchastiye: ~~SHEPEL~~,  
V.V.. ZHABOTINSKIY, Ye.Ye., red.; MURASHOVA, N.Ya., tekhn.red.

[Textbook of physics] Kurs fiziki. Izd.9., perer. Moskva,  
Gos.izd-vo fiziko-matem.lit-ry. Vol.1. [Mechanics, Acoustics.  
Molecular physics. Thermodynamics] Mekhanika. Akustika.  
Molekuliarnaya fizika. Termodinamika. 1959. 560 p.  
(MIRA 13:1)

(Physics)

SHEPELENKO, F.P.

56-6-25/47

AUTHORS: Demkov, Yu.N., Shepelenko, F.P.

TITLE: The Connection Between the Hulthén and Kohn Methods in the Theory of Collisions (Svyaz' mezhdu metodami Khyol'tena i Kona v teorii stolknoveniy)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1957, Vol. 33, Nr 6(12), pp. 1483-1487 (USSR)

ABSTRACT: The present paper investigates several varieties of direct methods of variation for the determination of the phase of the radial wave function. The equation for the determination of the phase in the variation method is:

$$\psi''(r) + (k^2 - V) \psi(r) = 0; \quad \psi(0) = 0, \quad \psi|_{r \rightarrow \infty} \sim A \sin(kr + \eta).$$

The variation principle for this problem can be written down in the following form:

$$\delta J = \delta \int_0^{\infty} \psi(r) \left( \frac{d^2}{dr^2} + k^2 - V \right) \psi(r) dr = -A^2 k \delta \eta$$

By inserting a trial function  $\tilde{\psi}(r)$  into the functional it is possible, by means of the variation principle, to derive a system of equations for the determination of the parameters  $d_1$ . This system of equations can be constructed in an ambiguous manner. First, the authors in-

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The Connection Between the Hulthén and Kohn Methods in the  
Theory of Collisions

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investigated the most simple, but very important case

$\tilde{\psi}(r) = \sum_{i=1}^n \alpha_i \varphi_i(r)$ . The functional then is a quadratic form

with respect to  $\alpha_i$ , and the corresponding variation principle can be written down in the form:  $\delta J = k(\alpha_2 \delta \alpha_1 - \alpha_1 \delta \alpha_2)$ . The equations for the determination of the coefficients  $\alpha_1, \dots, \alpha_n$  are written down. The condition for the existence of trivial solutions of the system is, in general, not satisfied. However, by eliminating one of the equations of the system, the system can be made soluble, and various formulations of the variation principle can be obtained. This is discussed in detail for Hulthén (Khyul'ten) and Kohn (Kon) methods. The results obtained by means of these two methods agree if certain equations, which are mentioned here, are compatible. The authors then endeavor to find out to what extent the integral identity resulting from the variation principle must be satisfied in the case of the trial functions obtained here. In the computation of the phase by the Kohn method this integral identity is automatically satisfied. Verification of the satisfying of integral identity is equivalent to a

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GORYASHKO, P.M., kand.tekhn.nauk; YEFREMEENKO, P.G., inzh.; KLIMOV, A.K., kand.  
tekhn.nauk; KODENKO, M.N., kand.tekhn.nauk; ~~SHEPELENKO, G.N.,~~ kand.  
tekhn.nauk

Causes of the breakdown of the power take-off drive in operating  
a tractor with a mounted sprinkling machine. Trakt. i sel'khoz mash.  
no.9:14-17 S '65. (MIRA 18:10)

1. Khar'kovskiy politekhnicheskii institut imeni V.I.Lenina.

СНИЖЕНИЕ, Л. П.

СНИЖЕНИЕ, Л. П. - "Investigation of the tractive qualities of a caterpillar-type tractor when turning." Khar'kov, 1955. Min Higher Education Ukrainian SSR. Khar'kov Polytechnic Inst imeni V. I. Lenin. (Dissertations for degree of Candidate of Technical Sciences.)

SC: Knizhnaya letopis', No 48. 26 November 1955. Moscow.

YEFREMENKO, P.G., inzh.; SHEPELENKO, G.N., kand.tekhn.nauk; KODENKO, M.N.,  
kand.tekhn.nauk

Using induction transducers for measuring displacements in the  
elements of the power transmission of a tractor. Vest.mashinostr.  
43 no.9:32-34 S '63. (MIRA 16:10)

L 06299-0/ EN(1) (D)

ACC NR: AT6015371

SOURCE CODE: UR/0000/65/000/000/0167/0170

AUTHOR: Shepelenko, K. O.; Zakolupin, G. N.

ORG: none

TITLE: The final driver stage for electroluminescent displays 25

SOURCE: AN BSSR. Institut tekhnicheskoy kibernetiki. Vychislitel'naya tekhnika (Computer engineering). Minsk, Nauka i tekhnika, 1965, 167-170

TOPIC TAGS: computer, digital computer technology, computer output unit, real time data display, electroluminescence panel, transistor circuit, ferrite switch

ABSTRACT: This paper is a sequel to one dealing with the generation of visual alphanumeric displays on electroluminescent panels. The present paper describes the design of the driver (see figure 1). The driver works as follows: the storage input transformer  $Tp_1$ , formed by a ferrite core with four windings, is normally in state "1". A write pulse, arriving at  $W_4$ , causes the core to change its state to "0". The voltage pulse induced in  $W_2$  is of such polarity that the high voltage transistor  $T_1$  remains in its normal "off" state. When the next clock pulse appears at  $W_3$  the core changes its state back to "1", and the pulse now induced in  $W_2$  turns the transistor  $T_1$  on, which initiates three separate events: a high voltage pulse appears at the output of the 1:10 pulse transformer  $Tp_2$  and actuates an electroluminescent element on the display,

Card 1/2

L 06299-67

ACC NR: AT6015371

the state of the core in  $Tp_1$  is changed to "0", and the capacitor  $C$  begins to charge;

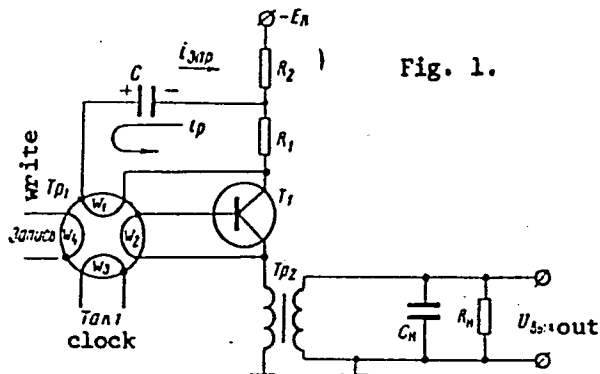


Fig. 1.

At the conclusion of the output pulse generation,  $T_1$  is turned off and the capacitor  $C$  discharges through  $R_1$  forcing the core to change its state back to the original "1". Now the circuit is ready to receive the next write pulse. Experiments have shown this circuit to be stable and useful for applications with various electroluminescent devices. Orig. art. has: 3 figures.

SUB CODE: 09/

SUBM DATE: 15Dec65

Card 2/2 *gl*

L 06596-67 EWT(d)/EWP(1) IJP(c) GG/BB/GD

ACC NR: AT6015360

SOURCE CODE: UR/0000/65/000/000/0031/0036

AUTHOR: Shepolenko, K. O.

ORG: none

TITLE: Commutating codes <sup>37</sup><sub>13+1</sub>

SOURCE: AN BSSR. Institut tekhnicheskoy kibernetiki. Vychislitel'naya tekhnika (Computer engineering). Minsk, Nauka i tekhnika, 1965, 31-36

TOPIC TAGS: computer, computer technique, binary code, computer coding

ABSTRACT: A new type of code which reduces computer loading and increases efficiency is proposed by the author. The new code and its relation to the original common binary code is explained in figure 1. Pulse train "a" represents a sixteen-bit word in the original binary code. Each vertical line represents a logical "1" and the absence of a line in the appropriate position represents a logic "0". Pulse train "b" corresponds to the original word "a" such that there is a logical "1" when in the original word the bit state changes from "0" to "1". The pulse train "c" has a logical "1" when there is a change in the bit state in the original binary word from "1" to "0". The words "b" and "c" form the words in commutating code for the word "a". If the transformation rules are as above specified, the "b" and "c" completely describe the word "a". The properties of the new code are defined by proving the theorem "The number of

Card 1/2

L 06596-67

ACC NR: AT6015360

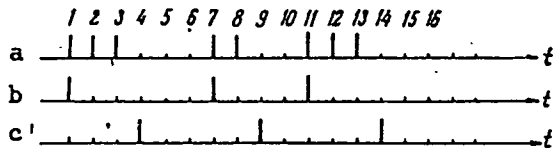


Fig. 1.

"1's" in a word expressed in the commutating code may not exceed the number of "1's" in the corresponding original binary word", and the lemmas "The loading coefficient of the commutating code does not exceed the loading coefficient of the original code", and "For coded words in which the discontinuity coefficient tends to one, the sum of the "1's" in both corresponding words expressed in commutation code tends to twice the number of "1's" in the original word". The coefficient of loading is defined as the ratio of "1's" to the total number of bits in the word, and the coefficient of discontinuity is said to be the ratio of the number of commutations from "0" to "1" and from "1" to "0" to the total number of bits in the word. The author contends that the adoption of this code in place of those now commonly used will reduce the computer logic and memory capacity requirements while also decreasing heat generation. The latter is a particular advantage for increasing the reliability and life of microcircuit logic. Orig. art. has: 46 formulas.

SUB CODE: 09/

SUBM DATE: 15Dec65

Card 2/2 *m/c*

ACC NR: AT6015370

SOURCE CODE: UR/0000/65/000/000/0163/0167

AUTHOR: Yur'yev, V. F.; Shepelenko, K. O.

ORG: none

TITLE: Some problems in generating numerical information for visual observation

SOURCE: AN BSSR. Institut tekhnicheskoy kibernetiki. Vychislitel'naya tekhnika (Computer engineering). Minsk, Nauka i tekhnika, 1965, 163-167

TOPIC TAGS: digital computer, computer technology, computer output unit, real time data display, electroluminescence panel, digital decoder, signal decoding

ABSTRACT: Alphanumeric characters can be formed on electroluminescent display panels consisting of individually controlled elements. Separate logic modules are used for each character to be generated, such that no information concerning the structure of the characters need be stored. The output of the character-generating modules is channeled to the appropriate position on the display panel. Each display module consists of 40 elements, arranged in 5 rows and 8 columns. The individual elements are actuated by applying voltages of opposite polarities to the corresponding  $x$  and  $y$  terminals. The display unit consists of three modules: the electroluminescent panel, the driver unit, and the character generating logic module. A single pulse from the computer control logic module initiates the formation of a character by opening a gate and admit-

Card 1/2

ACC NR: AT6015370

ting clock pulses into the character generating logic module. The clock pulses are used to actuate each row driver from 1 to 8 in succession. The corresponding column drivers are either actuated or inhibited by the outputs from the character generating logic module. Thus a number or a letter is formed by the luminescing elements at the intersections of actuated columns and the sequentially energized rows. Since only the columns require logic control, 5 instead of 8 control functions are necessary. Transistor-ferrite core combinations are used in the character generating logic module. This approach to visual data presentation is convenient, simple, and flexible. Convenient, because a single pulse is required to initiate the display of character; simple, because of the minimum number of logical operations, and therefore few components, are necessary to generate a character; flexible, because the character selection can be in any sequence, hence, this display may be used with any computer. Orig. art. has: 2 figures.

SUB CODE: 09/

SUBM DATE: 15Dec65

Card 2/2 *gpd*

L 5074L-45 ENT(m)/EPF(n)-2/T/EnPit)/EAP(b)/EWA(c) Pu-4 IJP(c) JD/WW/JG  
 ACCESSION NO: APS111935 UR/0363/65/OC1/003/0383/0387  
 546.831'431

AUTHOR: Limar', T. F.; Savos'kina, A. I.; Shepelenko, L. A.

TITLE: Preparation of barium zirconate by coprecipitation

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 3, 1965, 383-387

TOPIC TAGS: barium zirconate, barium, zirconate, coprecipitation, coprecipitate  
 thermal decomposition, coprecipitate decomposition

ABSTRACT: The object of the study was to prepare barium zirconate by thermal decomposition of Ba-Zr coprecipitates. The following systems were used in studying the conditions of coprecipitation of Ba and Zr:

$BaCl_2-ZrOCl_2-Na_2CO_3-H_2O$ ;  $BaCl_2-ZrOCl_2-(NH_4)_2CO_3-H_2O$ ;  $BaCl_2-ZrOCl_2-(NH_4)_2CO_3-NH_3-H_2O$ . In all experiments an equimolar quantity of Ba and Zr was used (up to 0.15 gram-ion/l) and the quantity of precipitating reagents was such as to ensure that the ratio  $n = (NH_4)_2CO_3(Na_2CO_3)/Zr^{4+}(Ba^{2+})$  varied from 1.0 to 6.0. A quantitative coprecipitation of Ba and Zr is effected with  $Na_2CO_3$  at a ratio of  $BaCl_2:ZrOCl_2:Na_2CO_3 = 1:1:(2.5-3.0)$  in the 9.5-9.8 pH range; and with a mixture of ammo-

Card 1/2

L 54994-65

ACCESSION NR: AP5011935

nium carbonate and ammonia at a ratio of  $\text{BaCl}_2:\text{ZrOCl}_2:(\text{NH}_4)_2\text{CO}_3:\text{NH}_4\text{OH} = 1:1:1.5:$   
:(4-6) in the 9.3-9.4 pH range. Coprecipitation of barium and zirconium with a mix-  
ture of  $(\text{NH}_4)_2\text{CO}_3 + \text{NH}_4\text{OH}$  yields  $\text{BaCO}_3$  and  $\text{Zr}(\text{OH})_4$  and coprecipitation with  $\text{Na}_2\text{CO}_3$   
yields  $\text{BaCO}_3$ ,  $\text{Zr}(\text{OH})_4$ , and some  $\text{Na}[\text{Zr}(\text{OH})_3\text{CO}_3]$ . The precipitates were dried and  
heated to  $1100^\circ\text{C}$  at a rate of  $150^\circ$  to  $200^\circ\text{C/hr}$ . A 9-10 hour calcining at  $1100^\circ\text{C}$   
yielded barium zirconate powder of particle size less than  $1\mu$ . Orig. art. has: 4  
tables and 1 figure.

ASSOCIATION: Donetskiy filial VNII khimicheskikh reaktivov i osobochistykh  
veshchestv (Donets Branch of the VNII of Chemical Reagents and High Purity Compounds)

SUBMITTED: 24Aug64

ENCL: 00

SUB CODE: Ic, Gc

NO REF SOV: 008

OTHER: 002

Card 2/2

SHEPELENKO, L. G.

Experiments on chemical chromium plating and cobalt plating.  
Khim. v shkole 17 no.6:83-84 N-D '62. (MIRA 16:1)

(Plating) (Chemistry—Experiments)

SHEPELENKO, L.G.

Experiments in producing photographic images on the oxide film  
on aluminum and its alloys. ~~Kh~~ a. v shkole 18 no.5:69-71  
S-0 '63. (MIRA 17:1)

SHEPELENKO, L.M.

Problems of projective bending of families of plants in  $P_n$ . Izv.  
vys.ucheb.zav.; mat. no.1:210-217 '60. (MIRA 13:6)

1. Tomskiy gosudarstvennyy universitet imeni V.V.Kuybysheva.  
(Geometry, Analytic)

SHEPELENKO, L.G.

Experiments in producing photographic images on the oxide film on  
aluminum and its alloys. Khim. v shkole 18 no.5:69-71 S-0 '63.  
(MIRA 17:1)

CHOVNYK, N.G.; SHEPELENKO, L.G.

Some experiments with molten salts. Khim. v shkole 18 no.6:70-74 N-D  
'63. (MIRA 17:1)

SHEPELENKO, L. M., CAND PHYS-MATH SCI, "PROJECTING BENDING OF CERTAIN FAMILIES OF PLANES IN  $\mathcal{M}$ -MEASURED PROJECTED SPACE." TOMSK, PUBLISHING HOUSE OF TOMSK UNIV, 1961. (TOMSK STATE UNIV IMENI V. V. KUYBYSHEV). (KL-DV, 11-61, 209).

SHAFAEROVA, K.A.; SHEPELENKO, T.A.; TEPLOVA, S.V.

Distribution of pathogenic serotypes of *Escherichia coli* in a rural locality. Zdrav. Turk. 7 no.11:26-28 N'63 (MIRA 17:3)

16.7300

S/179/60/000/005/009/010  
E081/E135

AUTHOR: Shepelenko, V.N. (Tomsk)

TITLE: Some Problems of Elasticity Theory for an Anisotropic Strip

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, No 5, pp 164-168

TEXT: The method of Kufarev and Sveklo (Ref 1), used by them in investigating the first boundary value problem, is extended to the second (Para 1) and the mixed (Paras 2, 3) boundary value problems of an anisotropic strip. In Para 1, the known components of the displacement vector on the edges of the strip are

$$u = u_k(x); \quad v = v_k(x); \quad y = (-1)^{k+1}h; \quad k = 1, 2.$$

According to Lekhnitskiy (Ref 2), the problem leads to the determination of two functions:

$$F_k(z_k), \quad z_k = x + \mu_k y.$$

Analytically, Eqs (1.1) follow from the boundary conditions for Card 1/2

S/179/60/000/005/009/010  
E081/E135

Some Problems of Elasticity Theory for an Anisotropic Strip

$|y| < h$ ;  $p_1$  and  $p_2$  are the complex roots of the characteristic equation (1.2); the elastic constants  $a_{rs}$  form a symmetrical matrix, the principal minors of which are essentially positive. The solution of the problem is obtained as the Fourier integral (1.4), and this integral is further developed in the remainder of Para 1. In Para 2, the stresses at  $y = h$  are assumed to be known as

$$Y_y = P_1(x); \quad -X_y = P_2(x),$$

and the displacement components at  $y = -h$  as

$$u = Q_1(x); \quad v = Q_2(x).$$

The boundary conditions for the function  $F_k(z_k)$  are given by (2.1), and the solution has the form (2.3). In Para 3, the shear stress is assumed known on one edge of the strip and the displacement components on the other as given in Eqs (3.1); the solution then takes the form (3.3).

There are 3 Soviet references.

ASSOCIATION: Tomskiy gosudarstvennyy universitet.  
Gard 2/2 (Tomsk State University)

SUBMITTED:  
April 7, 1960.

SHEPELENKO, V.N.

Determining stresses in a double orthotropic band. Uch.zap.TGU  
no.36:59-64 '60. (MIRA 14:5)  
(Elastic plates and shells)

SHEPELENKO, V. N.

Cand Phys-Math Sci - (diss) "Several problems in the theory of elasticity for anisotropic and orthotropic bands." Tomsk, 1961. 7 pp; (Tomsk State Univ imeni V.V. Kuybyshev); 150 copies; price not given; (KL, 6-61 sup, 196)

SHEPELENKO, V.N.; SHCHERBAKOV, R.N.

Conference pertaining to theoretical and applied problems  
in mathematics and mechanics held in Tomsk. Usp. mat. nauk  
16 no.1:221 Ja-F '61. (MIRA 14:6)  
(Mathematics--Congresses)

SHEPELENKO, V.N. (Novosibirsk)

Stability of an infinitely long cylindrical panel clamped along  
the edge. Izv. AN SSSR. Mekh. no.6:119-121 N-D '65.  
(MIRA 18:12)

L 04975-67 EWT(d)/EWT(m)/EWP(w)/EWP(v)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/WW/EM  
 ACC NR: AP6030811 SOURCE CODE: UR/0424/66/000/003/0089/0098 46  
 AUTHOR: Ivanov, G. V. (Novosibirsk); Shepelenko, V. N. (Novosibirsk) B  
 ORG: none  
 TITLE: Buckling and snapping under creep conditions of a square cylindrical panel compressed along its directrix 18  
 SOURCE: Inzhenernyy zhurnal. Mekhanika tverdogo tela, no. 3, 1966, 89-98  
 TOPIC TAGS: creep buckling, creep snapping, panel buckling, panel snapping, shell buckling, shell snapping, *creep, buckling, cylindric shell structure*  
 ABSTRACT: A square cylindrical panel compressed along its directrix is used as a model in a theoretical study of the buckling and the following oil-can effect of a cylindrical shell subjected to axial compression under creep conditions. The study is based on variational formulation of the creep problem for shallow cylindrical shells applying the power law to the flow with a certain index of creep. Only two methods used in overcoming the difficulties associated with determining the stress distribution along the shell thickness are discussed: 1) assuming that strains deviate slightly from the membrane state in the shell; the relations between stresses and strain rate are linearized with respect to differences between these quantities in membrane and nonmembrane states; and 2) assuming a linear stress distribution over the shell thickness, and determining the real distribution parameters by a  
 Card 1/2

L 04975-67

ACC NR: AP6030811

variational method based on variations of stresses and displacements. It is shown by way of comparison, that the results obtained for linear and nonlinear stress distributions are practically identical in the case of creep buckling of a square cylindrical panel with nondeformable edges compressed along its directrix. The phenomenon of snapping under creep conditions is discussed as an instantaneous transition of the shell from one mode of equilibrium to another. A system of ten differential equations for determining the stresses, deflections, and snapping of the panel under creep conditions are derived, starting with the solution of this problem for the elastic range (the initial state for the creep when the time parameter  $\tau = 0$ ). A way of simplifying this system is outlined, its numerical integration by the Runge-Kutta method is discussed, and the results are presented. Conclusions concerning snapping (time, critical load), equilibrium modes, and the effect of linearizing the creep law on the panel behavior are drawn. Orig. art. has: 4 figures and 22 formulas. [VK]

SUB CODE: 20/ SUBM DATE: 14Aug65/ ORIG REF: 008/ OTH REF: 002

Card

2/2

10

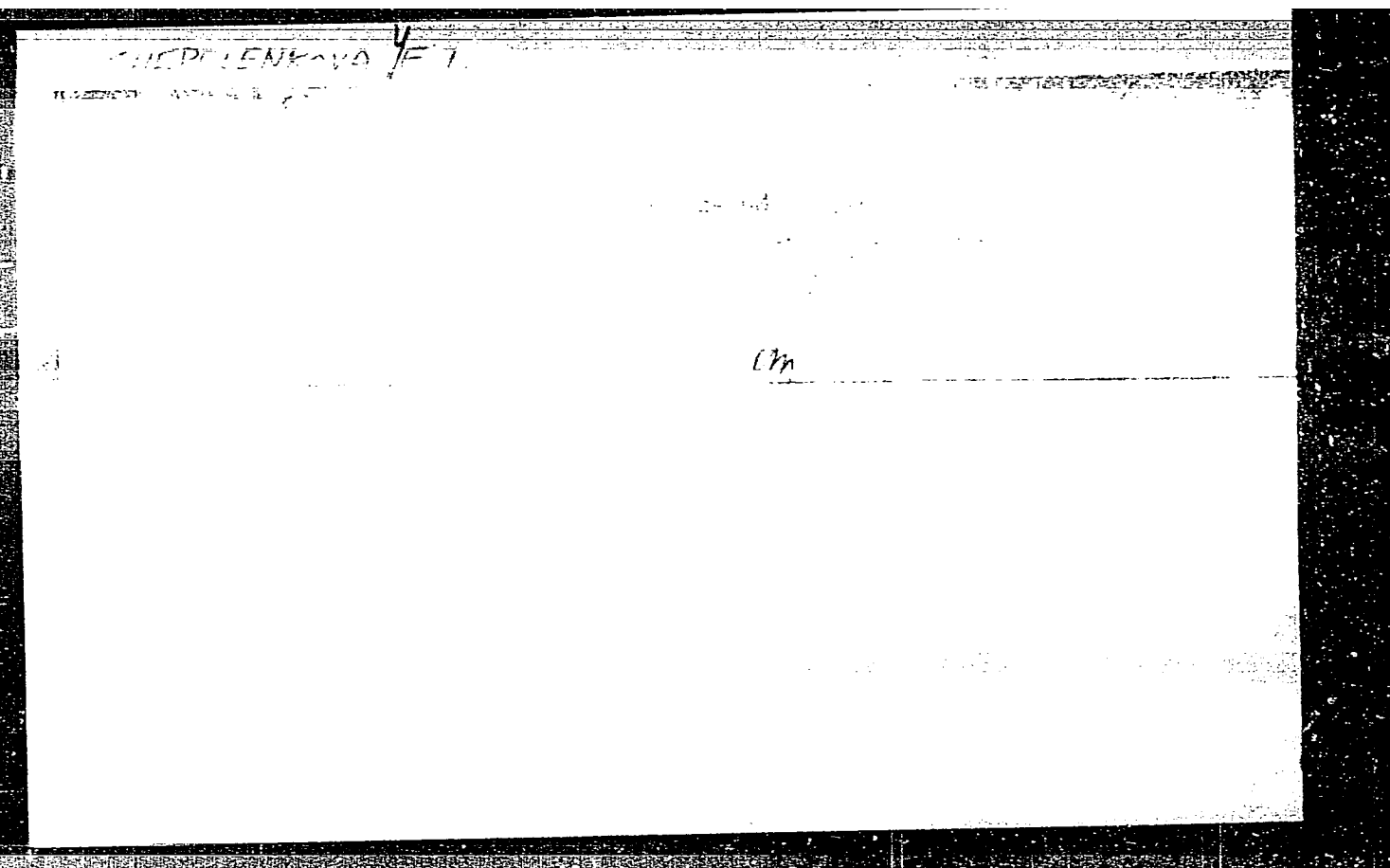
SHEPELENKOVA, Y. I.

ca

The sulfonating action of dialkyl sulfates. I. The reaction of dimethyl sulfate with methyldiphenyl- and triphenylamines. V. N. Belov. J. Gen. Chem. (U. S. S. R.) 11, 750-6 (1941).—At high temps., Me<sub>2</sub>SO<sub>4</sub> reacts with traces of H<sub>2</sub>O to form MeHSO<sub>4</sub>, which tends to form ammonium salts with amines, but when this reaction is difficult, sulfonation of the aromatic ring can also occur. The Me ester of the sulfonic acid is first formed and this later splits to give some free acid. Me<sub>2</sub>SO<sub>4</sub> does not sulfonate Ph<sub>2</sub>CO even at 180-90°, but at 150-60° it reacts with Ph<sub>2</sub>N to give some Me<sub>2</sub>O and MeOH and a glassy solid from which K triphenylaminesulfonate, m. 241-3°, is isolated with difficulty. When Me<sub>2</sub>SO<sub>4</sub> is heated for 2 hrs. at 140-8° with MePh<sub>2</sub>N it forms 44% of the ammonium salt, 32% sulfonic acid and 23% unchanged MePh<sub>2</sub>N. If the mixt. is heated for 5 hrs., the yields are 50, 21.8 and 28%, resp. II. The reaction of dimethyl sulfate with ethers. V. N. Belov and E. I. Shepeleknova. Ibid. 757-62.—When 0.125 mole Me<sub>2</sub>SO<sub>4</sub> reacts with 0.1 mole PhOMe at 155-60°, the products are 4.5-5 cc. Me<sub>2</sub>O, 40.5% HO<sub>2</sub>SC<sub>6</sub>H<sub>4</sub>OMe and 26.7% MeO<sub>2</sub>SC<sub>6</sub>H<sub>4</sub>OMe; with Ph<sub>2</sub>O, heated at 180-90°, the yields are 5 cc. Me<sub>2</sub>O, 68.9% HO<sub>2</sub>SC<sub>6</sub>H<sub>4</sub>OPh and 21.3% MeO<sub>2</sub>SC<sub>6</sub>H<sub>4</sub>OPh. Under the same conditions, 2-C<sub>6</sub>H<sub>4</sub>-OMe gives 7 cc. Me<sub>2</sub>O and 75.7% total sulfonation products. When PhCH<sub>2</sub>OMe and Me<sub>2</sub>SO<sub>4</sub> are heated at 150-60°, sulfonation does not occur. SO<sub>2</sub> is formed and the ether link is split. Similarly, when Me<sub>2</sub>SO<sub>4</sub> is heated for 2 hrs. with iso-Am<sub>2</sub>O at 155-60°, it gives a mixt. of Me<sub>2</sub>O, amylene, iso-AmOMe, SO<sub>2</sub> and high-boiling products. H. M. Leicester

ASS-ILA METALLURGICAL LITERATURE CLASSIFICATION

10



SHCHELENKOVA, Ye.I.

BELOV, V.N.; DAYEV, N.A.; KUSTOVA, S.D.; LEETS, K.V.; PODDUBNAYA, S.S.  
SKVORTSOVA, N.I.; ~~SHCHELENKOVA, Ye.I.~~; SHUMEYKO, A.K.

A new process for irone synthesis. Zhur.ob.khim. 27 no.5:1384-1389  
My '57. (MLBA 10:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskikh  
i natural'nykh dushistykh veshchestv.  
(Irone)

KORE, S.A.; kand.khimicheskikh nauk; SHEPELENKOVA, Ye.I.; CHERNOVA, Ye.M.,  
izh.

Acetals and their identification in a thin layer by the  
chromatographic method. Masl.-zhir.prom. 28 no.3:32-33 Mr '62.  
(MIRA 15:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskikh i  
natural'nykh dushistykh veshchestv.

(Acetal)

(Chromatographic analysis)

SHEPELEV, A., inzh.-stroitel'

Do-it-yourself house repairs and decoration. Sov.shakht.  
10 no.7:45-46 J1 '61. (MIRA 14:8)  
(Building--Repair and reconstruction)

SHEPELEV, A.

How to sharpen carpenter tools. Nauka i zhizn' 28 no.9:96-97  
S '61. (MIRA 14:12)

(Carpentry—Tools)  
(Grinding and polishing)

SHEPELEV, A., inzh.

Efficient methods for finishing work. Sel'. stroi.  
15 no.3:29-30 Mr '60. (MIRA 16:2)  
(Plastering)  
(Painting, Industrial)

SHEPELEV, A.A.; LITVINOV, I.R.

Results of the operation of N8 electric locomotives on the Tomsk  
Railroad. Zhel.dor.transp. 43 no.3:17-23 Mr '61.

(MIRA 14:3)

1. Zamestitel' nachal'nika Tomskoy dorogi (for Shepelev). 2. Glavnyy  
inzh.sluzhby lokomotivnogo khozyaystva Tomskoy dorogi (for Litvinov).  
(Electric locomotives)

SHEPELEV, A.A.

The workers of the Western Siberian Railroad are struggling for highly efficient use of locomotives. Elek. i tepl. tiaga 7  
no.4:1-5 Ap '63. (MIRA 16:4)

1. Zamestitel' nachal'nika Zapadno-Sibirskoy dorogi.  
(Siberia, Western--Railroads--Employees) (Locomotives)

SHEPELEV, Aleksandr Grigor'yevich, ASHCHEPKOV, Yevgeniy Andreyevich;  
KOZHEVNIKOV, Savva Yelizarovich; NEMIRA, Kirill L'vovich; KITAYNIK,  
Abram Usherovich; SINAGOV, V.N., red.; MAZUROVA, A.P., tekhn.red.

[With our friends; impressions of Siberians visiting people's  
democracies] U Nashikh друзей; vpechatleniia sibiriakov, pobывavshikh  
v stranakh narodnoi demokratii. [Novosibirsk] Novosibirskoe knizhnoe  
izd-vo, 1957. 127 p. (MIRA 10:12)

(China--Description and travel)  
(Czechoslovakia--Description and travel)  
(Germany, East--Description and travel)

87212

S/126/60/010/001/025/027/XX  
E032/E314

18.8100 1045, 1418, 1138

AUTHORS: Pervakov, V.A., Khotkevich, V.I. and  
Shepelev, A.G.

TITLE: Latent Heat of Plastic Deformation of Silver at  
-196 and +20 °C

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol. 10,  
No. 1, pp. 117 - 121

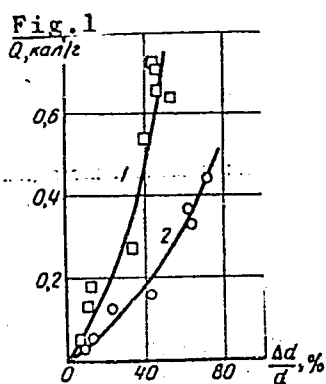
TEXT: The present authors have measured the latent heat of deformation  $Q$ , on the degree of deformation  $\Delta d/d$  and the work  $A$  done in compressing silver specimens at temperatures between -196 and 20 °C. The pulse method described by the second of the present authors et al in Ref. 1 was employed. 99.99% pure silver wires, having a diameter of 0.1 mm and length of 60 mm were used. The deformation was produced by compression between polished steel plates. Fig. 1 shows the dependence of  $Q$  (cal/g) on  $\Delta d/d$  at -196 °C (Curve 1) and +20 °C (Curve 2). Fig. 2 shows the latent heat  $Q$  as a function of  $A$  (cal/g) at the same temperatures as in Fig. 1. Fig. 3 shows  $Q/A$  as a function of  $A$  and Fig. 4

Card 1/4

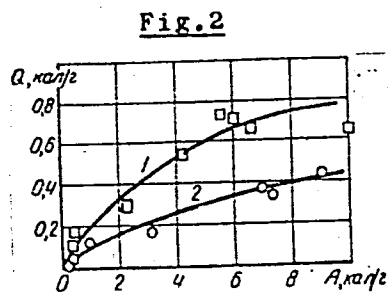
87212

S/126/60/010/001/025/027/XX  
E032/E314

Latent Heat of Plastic Deformation of Silver at  $-196$  and  $+20$  °C shows the latent heat  $Q$  as a function of the relative change in the resistance of the specimens. Acknowledgments are expressed to N.L. Zheldakov for assistance in building the apparatus and in the measurements. There are 4 figures and 7 references: 5 Soviet and 2 non-Soviet.



Card 2/4



87212

S/126/60/010/001/025/027/XX  
E032/E314

Latent Heat of Plastic Deformation of Silver at -196 and +20 °C

Fig. 2

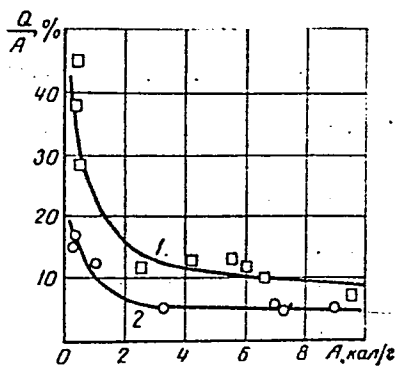
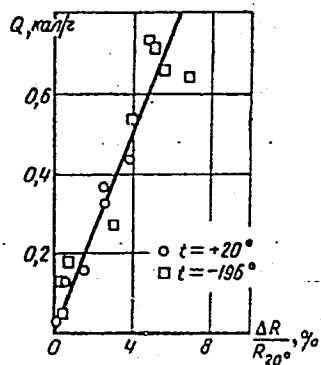


Fig. 4



Card 3/4

87212  
S/126/60/010/001/025/027/XX  
E032/E314

Latent Heat of Plastic Deformation of Silver at -196 and +20 °C

ASSOCIATIONS: Fiziko-tekhnichekiy institut AN UkrSSR  
(Physicotechnical Institute of the AS  
Ukrainian SSR)  
Khar'kovskiy gosudarstvennyy universitet  
imeni A.M. Gor'kogo (Khar'kov State  
University imeni A.M. Gor'kiy)

SUBMITTED: February 15, 1960

Card 4/4

ACCESSION NR: AP4009139

S/0056/63/045/006/2076/2077

AUTHOR: Shepelev, A. G.

TITLE: Anisotropic energy gap in superconducting tin

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 45, no. 6, 1963,  
2076-2077

TOPIC TAGS: superconductivity, superconducting tin, energy gap,  
anisotropic energy gap, ultrasound absorption, longitudinal ultra-  
sound absorption, anisotropic superconductor anomaly, ultrasonic  
absorption coefficient ratio

ABSTRACT: The absorption of longitudinal ultrasound in the frequen-  
cy range 100--250 Mcs was measured in single crystals of pure tin  
(impurity content  $\sim 10^{-4}\%$ ) at temperatures 1--4°K. The samples were  
oriented so that the ultrasound was propagated at right angles to  
the (101), (301), and (111) planes. Deviations have been observed  
from the exponential law at the lowest temperatures, and are attribu-  
ted to the anomalies predicted by Prokrovskiy (ZhETF, v. 40, 898,

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ACCESSION NR: AP4009139

1961) in the behavior of anisotropic superconductors. The results give grounds for assuming that the anisotropy of the energy gap in superconducting tin is not less than 50% (fuller data will be published elsewhere). The minimum energy gap at 0°K is obtained by extrapolating the temperature dependence of the ratio of the ultrasonic absorption coefficients. "The author regards it as his pleasant duty to thank N. V. Zavaritskiy, B. G. Lazarev, V. G. Peschanskiy, and I. A. Privorotskiy for useful discussions, and A. I. Berdovskiy and G. D. Filimonov for their help with the measurements." Orig. art. has: 2 figures and 1 formula.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physico-technical Institute, AN UkrSSR)

SUBMITTED: 16Sep63

DATE ACQ: 02Feb64

ENCL: 01

SUB CODE: PH

NO REF SOV: 005

OTHER: 004

Card 2/8

REF ID: A61111 (1) IJP(c)

ACCESSION NR: AP5007957

S/0120/65/000/001/0194/0198

AUTHOR: Shepelev, A. G.; Fillimenov, G. D.

TITLE: Outfit for studying absorption of h-f ultrasonic radiation by  
superconductors

SOURCE: Priory i tekhnika eksperimenta, no. 1, 1965, 194-198

TOPIC TAGS: ultrasonics, ultrasonic absorption, superconductor

ABSTRACT: An outfit is described which is intended for studying the absorption-temperature relation at 4-1 K by a pulse method. The outfit comprises (see Enclosure 1) sync unit 9 which controls negative pulses in modulator 7 which modulates the oscillations of h-f (up to 300 Mc) oscillator 3; the oscillator pulses excite transmitting quartz 1; from receiving quartz 2, the pulses enter receiver 5. Signals from the specimen and comparison pulses from 6, after amplification and detection in 4, arrive at oscilloscope 8 where a series of pulses corresponding

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ACCESSION NR: AP5007057

to the multiple reflection of ultrasonic radiation by parallel surfaces of the specimen can be observed. The low-temperature unit consists of three insulated Dewar vessels (one with nitrogen and two with helium) which are arranged schematically (sketch supplied). "The authors wish to thank K. D. Sinel'nikov for support and attention to the work, B. G. Lazarev and A. P. Korolyuk for valuable advice, N. N. Mikhaylov for lending the carbon thermometers, and A. A. Kardovskiy for his help in installing the outfit." Orig. art. has: 6 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physico-Technical Institute AN UkrSSR)

SUBMITTED: 02Sep64

ENCL: 01

SUB CODE: GP

NO REF SOV: 010

OTHER: 002

Card 2/3

L 52957-65 EWT(1)/EWT(m)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b)/EWA (c) IJP(c)  
JD/GG

ACCESSION NR: AP5010497

UR/0056/65/048/1054/1061

AUTHOR: Shepelev, A. G.; Filimonov, G. D.

TITLE: An investigation of energy gap anisotropy in superconducting tin

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 4, 1965, 1054-1061

TOPIC TAGS: tin, superconductivity, energy gap, ultrasound absorption, electronic absorption, single crystal, anisotropy

ABSTRACT: New experimental data are presented on electronic absorption of ultrasound up to 300 Mcs in pure tin single crystals at 1--4K, obtained by investigating experimentally the temperature dependence of the absorption in several new directions of ultrasound propagation in the crystal. The samples were spherical single crystals grown by the Obreimov-Shubnikov method. The directions of the acoustic wave vectors were perpendicular to all the crystallographic planes of low indices, determined goniometrically from the reflection spot pattern following etching. The ultrasound was fed to the samples from an oscillating crystal through a thin vacuum-cooked layer of a rubber and vaseline mixture. The ultrasound passing through the

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ACCESSION NR: AP5010497

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sample excited a quartz receiver, the output of which was amplified and compared with a comparison pulse from a standard generator. A detailed description of the apparatus is published elsewhere (PTE No. 1, 194, 1965). The values obtained for the energy gap in the electron spectrum of superconducting tin are used to map the anisotropy of the gap on the Fermi surface. The gap values obtained range from a minimum of 3.2 kT<sub>c</sub> to a maximum of 4.8 kT<sub>c</sub>, compared with a minimum value 2.7 kT<sub>c</sub> obtained by N. V. Zavaritskiy (ZhETF v. 45, 1839, 1963). The results indicate that the energy gap of superconducting tin has an anisotropy of 70%. The authors thank K. D. Sinel'nikov for interest in the work and support, and N. V. Zavaritskiy, M. I. Kaganov, B. G. Lazarev, V. L. Pokrovskiy, and I. A. Privorotskiy for interesting discussions." Orig. art. has: 4 figures and 1 table.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainsskoy SSR (Physico-technical Institute, Academy of Sciences UkrSSR)

SUBMITTED: 12Nov64

ENCL: 00

SUB CODE: SS, GP

NR REF SOV: 019

OTHER: 014

BAB

Card 2/2

L 02195-67 EWT(d)/EWT(1)/EWT(m)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/WW/AT

ACC NR: AP6032470

SOURCE CODE: UR/0056/66/051/003/0746/0748

AUTHOR: Shepelev, A. G. ; Fillmonov, G. D.

ORG: Physicotechnical Institute, Academy of Sciences Ukrainian SSR (Fiziko-  
tehnicheskly Institut Akademii nauk Ukrainskoy SSR)

TITLE: Experimental investigation of the frequency dependence of electron  
absorption of ultrasound in tin single crystals of various crystallographic  
orientations

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 51, no. 3, 1986,  
746-748

TOPIC TAGS: low temperature physics, low temperature effect, ultrasound  
absorption, temperature dependence, tin single crystal, crystal orientation

ABSTRACT: The temperature dependences of electron absorption of ultrasound  
in pure tin single crystals were measured by the pulse technique in the frequency  
range from 90 to 280 Mc/sec, and temperatures between 1 and 4K; the sound wave  
vectors were perpendicular to the crystallographic planes (101), (111), (301),  
(112), (211), (113), and (311). In accordance with the theory, the electron absorp-

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194 SHEPELEV, A. I.

Investigations in the field of polymerization and drying of oils and esters of fat acids. I. The theory of polymerizability of oils and their polymers. A. Ya. Drinberg, *J. Gen. Chem.* (U. S. S. R.) 10, 2052-8 (1940).—After J. Gen. Chem. (U. S. S. R.) 10, 2052-8 (1940).—After discussing different theories D. concludes that the Card-Bradley statistical method of investigating high-thermochemical compds. (C. A. 30, 2457; 31, 5183) is little applicable to the study of oils, since they contain no equiv. active functional groups. Ester groups, especially esters of alks. of high hydroxyl content are essentially to be considered as functional groups. It is suggested to consider the unlike activity of the most important functional groups, according to their thermochem. increment (thermochem. method). The additive influence of these groups is admitted and basic corrections are examd. It is further suggested to try the application of the thermochem. method to the investigation of the processes of polymerization, drying and aging of high-polymer compds., especially fats. 2) references. II. Heat of polymerization and the probable character of polymers of oils. A. Ya. Drinberg and A. I. Shepelev. *Ibid.* 2050-64.—The process of polymerization of 4 oils, tung (I), linseed (II), sunflower (III), and cottonseed (IV) were investigated, in order to verify the basic theses of our first report. The heat of polymerization of the vegetable oils was detd. as heat of polymerization of the heat of combustion of the raw and polymerized oil. 2 series of N were made: 1 during 3 hrs. at 300° and the 2nd between 280-90° until gelation.

The heat of polymerization of the investigated oils at 280-90° (oil gelation were: I U found 9378-9060 = 318 cal./g. calcd. 328 cal./g. Correction for the heat of combustion of the fuse = q<sub>1</sub> = 22.25 cal./g. II U found 9438-9200 = 238 cal./g., calcd. 238 cal./g., q<sub>1</sub> = 19 cal./g. III U found 9322-9377 = 145 cal./g., calcd. 181 cal./g., q<sub>1</sub> = 19 cal./g. IV U found 9490-9375 = 115 cal./g., calcd. 107 cal./g., q<sub>1</sub> = 19 cal./g. From these and other exptl. considerations the following conclusions were drawn: The chosen method of calcn. of potential functionality, heat of polymerization and depth of reaction that take place on the polymerization of vegetable oils give results, which approach those found experimentally. The study of coeff. of reaction completion shows that on heating oils for a short period 2 functional groups are seemingly spent on the intermol. reaction for each functional group spent on the intermol. process of polymerization. Linseed oil is an exception, where as an av. 1.5 functional groups are spent on the intermol. reaction. A rearrangement occurs on prolonged heating of semidrying oils, as a result of which the no. of functional groups used for the intermol. reaction is increased. The thermochem. method is not accurate enough on account of the calorimeter error, the absence of cryoscopic method of mol. wt. detn. of oil. Further investigations were to be made to eliminate these shortcomings. III. Heat of drying of linseed oil. A. Ya. Drinberg and V. G. Yushin. *Ibid.* 2065-72.—An attempt was made to show the relationship between the heat given off

SHEPELEV, A.I.

Chemical Abst.  
Vol. 48 No. 4  
Feb. 25, 1954  
General and Physical Chemistry

Metastable solutions of calcium chloride and the temperature limits of their existence. A. I. Shepelev, Doklady Akad. Nauk S.S.S.R. 72, 703-6 (1980).  
The system  $\text{CaCl}_2\text{-H}_2\text{O}$  was studied in the temp. range 0-50°. The stable crystn. curve agrees well with data obtained previously by Bassett, *et al.* (C.A. 31, 7331°), with  $\alpha\text{-CaCl}_2\cdot 6\text{H}_2\text{O}$  stable from 0°, 37.30%  $\text{CaCl}_2$  to 30.1°, 49.72%;  $\alpha\text{-CaCl}_2\cdot 4\text{H}_2\text{O}$  stable up to 46°, 55.92%, and  $\text{CaCl}_2\cdot 2\text{H}_2\text{O}$  stable above that point. The data on the 2 metastable ( $\beta$ - and  $\gamma$ -) forms of  $\text{CaCl}_2\cdot 4\text{H}_2\text{O}$  and their solns. diverged somewhat from Bassett's results.  $\gamma\text{-CaCl}_2\cdot 4\text{H}_2\text{O}$  exists in equil. with solns. whose comps. lie on a curve from 30°, 55.82% to 19.7°, 80.82%; the  $\beta$ -form from 41°, 55.81% to 15.9°, 48.95%; and the  $\alpha$ -form exists as a metastable form (in the  $\text{CaCl}_2\cdot 6\text{H}_2\text{O}$  region) from 30.1°, 49.72% to 14°, 45.99%.  $\text{CaCl}_2\cdot 2\text{H}_2\text{O}$  exists in a metastable form down to 9°, 55.82%. Arild J. Miller

6/8/54  
BW

CA SHEPELEV, A.I.

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Crystalloptical constants of  $\text{CaCl}_2 \cdot 4\text{H}_2\text{O}$ . A. I. Shepelev, M. N. Lyashenko, and I. G. Drushinin. *Doklady Akad. Nauk S.S.S.R.* 73, 379-81(1950).—The stability ranges of the  $\text{CaCl}_2$  hydrates are the following:  $\text{CaCl}_2 \cdot 6\text{H}_2\text{O}$  from  $-55$  to  $+30.1^\circ$ ;  $\text{CaCl}_2 \cdot 4\text{H}_2\text{O}$  from  $14$  to  $45^\circ$ ;  $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$  from  $39$  to  $175^\circ$ ;  $\text{CaCl}_2 \cdot \text{H}_2\text{O}$  from  $175$  to  $238^\circ$ . The tetrahydrate is observed in 3 modifications (cf. Bassett, *et al.*, *C.A.* 27, 3398; 31, 7321<sup>1</sup>): ( $\alpha$ ) triclinic, neg.,  $a = 1.532$ ;  $\beta = 1.560$ ;  $\gamma = 1.571$ ;  $2V = 63^\circ$ ; ( $\beta$ ) uniaxial, or pseudo-uniaxial, neg., in needles with  $a = 1.506$ ;  $\gamma = 1.530$ ; ( $\gamma$ ) in thin elongated plates, from supersatd. solns. at  $25^\circ$ , neg., with  $2V = 68^\circ$ ,  $a = 1.447$ ;  $\beta = 1.477$ ;  $\gamma = 1.491$ . The modification ( $\gamma$ ) is, in the dry state, easily changed to ( $\beta$ ) and the stable ( $\alpha$ ). The crysts. of ( $\alpha$ ) is observed between  $14$  and  $45.3^\circ$ , ( $\beta$ ) between  $15.9$  and  $41^\circ$ , ( $\gamma$ ) between  $19.7$  and  $39^\circ$ ; micrographs are given. W. R.

DRUZHININ, Ivan Georgiyevich, professor; SHEPELEV, A.I., dotsent;  
DISTANOV, G.K., otvetstvennyy redaktor

[Physical and chemical study of modifications of calcium chloride  
tetrahydrate] Fiziko-khimicheskoe izucheniye modifikatsii chetyrekh-  
vodnogo khloristogo kul'tsiya. Frunze, Kirgizskii gos.univ., 1955.  
63 p. (MIRA 10:1)

(Calcium chloride)

*SHEPELEV, A. I.*

Category: USSR / Physical Chemistry  
Thermodynamics. Thermochemistry. Equilibrium. Physico-chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29954

Author : Druzhinin I. G., Shepelev A. I.  
Inst : Institute of Chemistry, Academy of Sciences Kirgiz SSR  
Title : Quaternary System Calcium- and Sodium Chloride - Hydrogen Chloride -  
- Water.

Orig Pub: Tr. In-ta khimii AN KirgSSR, 1956, No 7, 3-17

Abstract: Investigation, at 25°, of solubility, and also of density and viscosity, of saturated solutions of the system  $\text{CaCl}_2$ -NaCl-HCl-H<sub>2</sub>O (I), and of the included therein systems of NaCl-HCl-H<sub>2</sub>O (II),  $\text{CaCl}_2$ -NaCl-H<sub>2</sub>O (III) and  $\text{CaCl}_2$ -HCl-H<sub>2</sub>O (IV). In system I neither acid salts nor hydrates are formed, properties vary in accordance with continuous curves having minima. It was found that in system II, alpha-, beta- and gamma-modifications of  $\text{CaCl}_2 \cdot 4\text{H}_2\text{O}$ , can separate from metastable solutions, at NaCl concentrations up to

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SHEPELEV, A., inzh.

Finishing the surfaces of reinforced concrete elements. Sel'. stroi.  
no.6:19-21 Je '62. (MIRA 15:7)  
(Precast concrete) (Building--Details)